BHP COAL PTY LTD

GREGORY MINE

QMC SAFETY CONFERENCE

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EXECUTIVE SUMMARY

Gregory Mine is owned by the Gregory Joint Venture and operated on its behalf by BHP Coal Pty Ltd (BHPC). It comprises an open-cut coal mining operation located in Central Queensland, 270 kilometres west of Rockhampton. It is serviced by the townships of Emerald and Capella.

Mining operations commenced in 1979, with the first coal export shipments being made during 1980.

Gregory Mine is now in the second half of it's life cycle with the open cut currently scheduled to produce approximately 2.0mt of product per year. The establishment of the Crinum underground mine adjacent to the current open cut operation is designed to replace the portion of open-cut production that will be lost as the overburden strip ratio increases. Crinum's production will provide incremental growth for the combined operations as Gregory treats and rails the Crinum coal.

A recent BHP Minerals decision to move to the NOSA Five Star System meant that Gregory has had to take the system onboard and integrate it with our site system. We have found that the adoption of the NOSA System has enabled even greater involvement by the workforce in that they have conducted audits in their work areas and established action plans for completion, a first at Gregory.

STRONG MANAGEMENT COMMITMENT

Gregory Mine has always had a reasonable safety record as measured by the lost time injury frequency rate when compared to most Queensland coal operations but in comparison to overseas operations, even within the BHP Minerals Group, it was identified that we were lagging behind in most of the recognised safety performance indicators as were the rest of the Australian operations.

An international benchmarking exercise was conducted in 1994/5 by senior safety personnel from across BHP Minerals which not only enabled the identification of best practice for safety and occupational health both internally and externally but also identified the need for a uniform approach and auditing process given the diversity of the BHP Minerals operations internationally. It was on this basis that the NOSA Five Star System was selected.

With the new approach based on the NOSA Five Star System the implementation is being dealt with on a site specific basis by most of the BHP Minerals operations. The ability to shape a safety system which is site specific but incorporating the uniformity of a system like NOSA has enabled each site to develop at their own pace and within their own site requirements and for the system to be readily adopted and championed by the workforce. The NOSA System provides for Safety Committees, Safety Representatives and accountabilities for safety for everybody including line management. This enables participation at all levels.

The Management Team at Gregory Mine has always taken a high profile in driving the commitment to safety down to the appropriate level, the workforce. Recent surveys have indicated the safety profile of the Management Team is enhanced by:

- A daily Management Meeting where safety is the first topic reported by all departments with minutes generated and disseminated to notice boards by approximately 10.00 a.m. on that day, for the information of everybody onsite.
- A weekly half day Management Meeting where safety occupies a substantial proportion of the half day meeting with minutes taken as a record

- A five weekly walkaround inspection by the Management Team in operating departments in place of the weekly half day meeting
- Half yearly Regional Safety Audits led by the Southern Region General Manager and including mine management, supervision, wages personnel and external expertise
- Random inspections and testing of safety systems, such as evacuation procedures and mine traffic rule compliance, by managers

Whenever unsafe conditions or equipment is identified all employees are empowered to act by the application of our slogan:

"Safety First, Production Follows"

Subsequent General Managers, Site Managers and Department Managers have also re-inforced this theme.

Gregory has, due to it's Quality culture, been involved in benchmarking exercises whenever it has been deemed appropriate and beneficial to the business. Some instances of benchmarking involving members of the workforce are:

- A benchmarking team comprising workforce and supervisory personnel were involved in the selection and modification of a new diesel overburden drill
- Dragline operators, supervisors and safety personnel were involved in a benchmarking exercise to a coal mine in Queensland to assess the effectiveness of a mechanical device to change out heavy dragline jewellery without the need for manual handling.
- A teaming and safety benchmarking exercise with regard to employee involvement was conducted by taking members of the workforce and supervisors to N.S.W. where they studied enterprises that were considered to be industry leaders.
- Various safety improvement visits have been conducted since 1993 which include isolation lockout implementation team visits and visits to other sites which have implemented the NOSA Five Star System.

- All these visits were made by a majority of workforce members with the total support of the management of Gregory

PEOPLE INVOLVEMENT

With the adoption of the NOSA Five Star System the initial focus to enable the implementation to be successful has had to be concentrated on total employee involvement.

A decision was taken whereby the Safety and Occupational Health Department provides uniformity to the approach to the NOSA System, information on training and resources to enable ongoing implementation. That decision also includes each Department Head being held responsible for implementation in their area, with the Department Heads also acting as facilitators for the members of the workforce and committees that are involved. It was clearly evident from teaming meetings and safety presentations made by the workforce that management is truly seen by the workforce and themselves as the supporters of the process and not the administrators and managers of the process.

The planning for the implementation of NOSA for all practical purposes, as stated previously, is with the workforce representatives and committees and is largely based around a system of internal NOSA style audits. These were developed at Gregory and have generated action plans for implementation and have been recognised by NOSA as being as good as anything they do. The audits and action plans are managed by the workforce and have been adopted by a number of BHPC mines as the preferred approach to enable NOSA to be implemented.

The need for a positive isolation system was recognised as being required from a legal and "good practice" point of view in 1995. A group consisting of a Line Manager, an electrical supervisor and workforce members conducted a benchmarking exercise to other organisations. This resulted in the development of a lockout isolation system tailored to Gregory's requirements.

Along with personal isolation the implementation of the lockout/positive isolation procedures at Gregory Mine have enabled the development of multi area lockout

permit to work systems when working on major plant or equipment such as draglines.

A dragline captive key isolation system has also been developed at Gregory to enable quick and easy immobilisation of the equipment whenever live bucket work has to be carried out. This has removed a large part of the risk inherent in these type of operations.

All personnel, including all staff, have been trained in the lockout procedures and issued with personal locks. According to independent surveys and audits the workforce has taken the positive isolation system to heart as their own and so they should as it was, as stated previously, a combination of management, supervision, operators and trades people who developed the system.

The system is also subject to regular documented audits conducted by all levels of the Gregory workforce.

The incident/accident reporting system also developed by a consultative group includes risk assessment to enable the potential of a hazard or incident to be evaluated and, as a result, have the appropriate level of investigative resources made available.

The prioritisation of investigation by risk assessment has the advantage that different levels of investigation are conducted depending on the potential of the incident. These reports are analysed within each department on a monthly basis by the area safety committee. Agreement by the committee is the only avenue by which the risk assessment and actions arising from incidents can be signed off as completed. In all instances the initiator, where possible, and the supervisor are the keys to the initial investigation.

Any significant incidents are reported site wide through Safety Briefs and notice boards. This also enables evaluation, assessment and communication by site safety committees when planning monthly safety and communication meetings.

All personnel on BHPC mine sites are required to attend a meaningful safety and communication meeting every month. The safety and communication meetings are planned and conducted by members of the workforce in conjunction with their supervisors and with the Safety Department acting as a source of information and advice. The planned safety meetings over a number of years have resulted in many improvements to the work environment at Gregory such as the generation of specific procedures and work instructions, methods of safety communication, the review of accidents and incidents that occur in the work groups and the maintenance of housekeeping standards.

In addition to planned safety meetings all supervisors are required to conduct toolbox talks with their crews on an as needs basis. Records of attendance are held on hard copy and database in the Safety and Occupational Health Department.

The Site Safety Committee has the role and responsibility of dealing with any matters which cannot be effectively resolved at a departmental level, implementation of site wide strategies and policy setting. The Mine Manager, the Safety and Occupational Health Manager, a line manager and members of the workforce comprise the Site Committee.

Departmental safety committees have the role and responsibility of advising their Department Head on the direction for safety within the department and for promoting a safe working environment in the workplace. They also have the prime responsibility for the departmental implementation of the NOSA Five Star System as detailed previously.

An unique method of risk assessment has been developed within BHPC for eventual use across the whole of BHP. The methodology is not predicted around the frequency x severity of most models but relies on potential severity x effectiveness of management controls. The implementation of the Catastrophic Risk Management Plans is now well underway and is subject to regular reviews by Management including internal and external audits. The implementation of the Catastrophic Risk Management Plans have enabled Gregory Mine to identify, in a systematic manner, the conditions or deviations that lead to catastrophic events and manage them.

The process in the formative stages relies heavily on the input of workforce groups in identifying and assessing scenarios that have a catastrophic potential. Action plans to mitigate the risks are then developed and cascaded to departments for implementation as appropriate. This process and the recording of data is totally transparent with sites, groups and eventually divisions able to view each other's plans and actions.

TRAINING

In 1996/97 the entire Gregory workforce underwent a one day Hazard Identification/Risk Assessment course provided by an external consultant. This first year was part of a three year plan which will see the entire workforce in 1997/98 receive training in Job Safety Analysis and 1998/99 in Incident Investigation.

This plan will provide a common thread in workforce safety training which will encompass the use of pro-active measures to manage safety at the individual level as well as a re-active measure, incident investigation, which unfortunately is sometimes required.

The Mine Manager as well as department managers, along with all other staff, also attend this training.

In addition to the statutory requirement for induction training upon commencement at Gregory, all personnel are also required to undergo competency based refresher induction retraining in specific topics every two years as opposed to the statutory requirement of five years. This is tracked on a database which indicates that people are either due or are within three months of the expiry date so that training can be planned in advance. Non statutory topics such as duty of care are an integral part of this training. Contractor training is part of the same system with the database automatically deleting their records after two years therefore requiring a reinduction.

A survey conducted in 1996 by a member of the workforce in the Maintenance Department on the workforce's knowledge and awareness of the retraining topics indicated a correct response of between 80 and 90% to the survey questions. This survey was subsequently presented by the initiator to a Management Team meeting.

All departments are required to have a work area specific induction in place and, for recording purposes, provide documented evidence back to the Safety and Occupational Health Department indicating that the induction has been completed. This is equally applied to the Gregory and contractor workforce's.

All employees are required to have the appropriate training and skills to enable them to perform all their tasks in a safe and efficient manner.

The need for more stringent operator training systems at Gregory has led to the development of Nationally Accredited Training Manuals in most skills such as Dragline operations and Hauler Operations among others. The development of these manuals has been accomplished by members of the Gregory workforce with formal training qualifications. Operator training as delivered now is nationally accredited through VETEC.

A consultant has been engaged to provide training and develop standard procedures to deal with site specific emergencies.
These include:

- Dragline confined space fires
- Bulk fuel storage
- Bulk gas storage
- Explosives compound
- Reagent storage's
- Hazardous materials environmental emergencies

This training is nationally accredited and is followed up each year with refresher training. To complement the training a hazardous materials response trailer and fire tender were purchased which enables rapid response to any fire, environmental or hazardous materials emergency.

MONITORING

The Management Team at Gregory meet on a daily basis and review any issues that may have arisen during the past 24 hours that relate to safety and production. The minutes of these meetings are disseminated to notice boards by approximately 10.00 a.m. each morning.

A morning report is published by the Safety and Occupational Health Department and disseminated via E-Mail to all users including managers by 6.30 a.m. each weekday morning. This report is a summary of any incidents, accidents, hazards or near misses which have been reported in the previous 24 hours.

The Management Team also meets weekly on Tuesdays for half a day to review any issues that have arisen during the past week but more importantly to establish any planning or actions that need to occur as a result of the changing circumstances within the safety and production systems.

A monthly report is published by the Safety and Occupational Health Department which contains information on personnel and property damage; statistics on lost time injuries, days lost and all injuries. These statistics are compiled for year to date, rolling twelve months and current month. Contractor injuries are also collated and included with Gregory statistics in a separate section to enable a total minesite perspective to be generated. This report is disseminated across the mine site for the use of all personnel.

A summary report of required Key Performance Indicators is E-Mailed to Brisbane office at the end of each month for inclusion in the BHPC report which in turn is consolidated into the Minerals safety report. This report also includes a description of any safety initiatives and achievements reported by each site. Upon receipt of the report each month each Minerals site can then share in each others initiatives and achievements. From this report Gregory Mine also publishes a "League Table" of all Minerals sites (based on LTIFR and LTISR), which is broadcast to all E-Mail users onsite for distribution.

The Management Team conducts walk around inspections of operating areas every five weeks in place of the scheduled weekly Management Team meeting. These inspections have to date been conducted on dragline isolation, seat belt wearing, vehicle parking and the Crinum to Gregory overland conveyor which has just undergone commissioning. A report for action by departments and safety briefs to noticeboards are generated.

Regular loss control inspections are conducted in each department by members of the workforce in their area of responsibility. A report is generated detailing actions that are either new, outstanding or complete with responsibilities for actions defined. Each department safety committee is responsible for the management of this process within their department.

A system of regular audits of specified equipment, processes and behaviours is managed by the Safety Support Officers in their areas of responsibility. These range from isolation procedures, personal protective equipment wearing and condition, stacking and storage practices to heavy equipment parking. There is a clear intent that the Safety Support Officers manage the process but the audits are to be conducted by the workforce under their guidance.

A system of six-monthly Regional Safety Audits lead by the Southern Region General Manager have been established.

In addition to these audits the Southern Region General Manager also recently commissioned a consultant group, ACIL, to audit the three open cut mines in the southern region and provide a report on opportunities for improvement along with strengths. From this report the Gregory Mine Manager has commissioned ACIL to lead a Gregory review of the capturing of near miss incidents utilising information gathered from a wide range of mining sources. From this review we intend to implement a process that will enable us to better capture near miss events.

Grading audits are conducted by NOSA annually with a percentage effort and star grading awarded. Gregory Mine also requires NOSA to conduct audits on each

department between the grading audits and provide them with an effort rating. This is done so that each department can be provided with feedback on their areas requiring action and their rate of improvement.

The Catastrophic Risk Management process as mentioned earlier has a requirement for regular internal management reviews of implementation of action plans, internal audits of action plan progress conducted by the Safety Department and external audits conducted by a group of industry experts drawn from outside of BHP. The frequency of the external audits is determined by the level of performance at the previous audit.

The BHP Minerals Safety Group have developed a corporate auditing process which is in part based on self assessment with follow-up external auditing. Gregory is due for the first of these audits in 1998 with the frequency of audits again dependent upon the site's performance.

To put monitoring in perspective, in a period of less than five weeks Gregory was host to a Minex audit, a NOSA Grading audit, a Catastrophic Risk internal audit, a Catastrophic Risk external audit and the Southern Region audit by ACIL.

PERFORMANCE

To communicate improvements in the key corporate Key Performance Indicator, lost time injuries, an accumulative lost time injury graph is maintained to demonstrate the improvements over six years. The number of lost time injuries is tracked rather than L.T.I.F.R. as the graph is also used for workforce presentations. It is felt this is a format that will be better understood by the workforce.

The graph clearly shows the improvement over the past years.

The BHP Minerals key performance indicators are outlined in Safety Statistics published each month and are based on the Lost Time Injury Frequency Rate and Severity Rate. The publication also contains statistics relating to fatalities, lost time injuries, days lost, all injuries, property damage and near misses.

The report is broken down into BHP Minerals, each operating group such as BHPC, Iron Ore and Manganese and from there each site within a group. Contractors and employee statistics are recorded as well as descriptions of the lost time injuries, property damage, safety initiatives and safety achievements.

The intent of the report is to not only provide BHP Minerals wide information on traditional reactive measures, but also to give an insight into opportunities for improvement.

The statistics as detailed provide current contractor and Gregory performance combined as well as the Gregory performance alone.

The current strategic plan now contains a number of lead indicators such as the NOSA Effectiveness Scores and the Catastrophic risk Scores. The use of lead indicators by most corporations is something that is not particularly widespread but with BHP Coal now there are indications that these type of indicators are being given credence by the people at the top. A welcome trend.

The current Gregory performance indicates that we are on the right track and will eventually be in a position leading to a zero injury workplace. We know we are not there yet and still have a lot of work to do but as noted in the Minex Acknowledgment last year we had the processes largely in place and it was only a matter of further application and time then the performance would surely follow.

SAFETY MANAGEMENT

Gregory Mine

GREGORY MINE

1996 MINEX AWARDS

ACKNOWLEDGEMENT

"For implementation of quality processes and significant progress towards becoming best in class'

BHP

- Located Near Emerald
- 270km West of Rockhampton
- Open Cut Coal Mine
- 300 People

BHP

Strong Management Commitment

People Involvement

Continual Safety Training

Monitoring

Performance

BHP

Strong Management Commitment

People Involvement

Continual Safety Training

Monitoring

Performance

BHP

STRONG MANAGEMENT COMMITMENT

- "Safety First Production Follows"
- Clear Statement From The Top
- Understood By All

BHP

Strong Management Commitment

People Involvement

Continual Safety Training

Monitoring

Performance

BHP

PEOPLE INVOLVEMENT

- NOSA Implementation
- Positive Isolation
- Incident Reporting
- Safety Meetings
- Safety Committees
- Catastrophic Risk

BHP

Strong Management Commitment

People Involvement

Continual Safety Training

Monitoring

Performance

BHP

CONTINUAL SAFETY TRAINING

- Three year Plan
  - Hazard Awareness/Risk Assessment
  - Job Safety Analysis
  - Incident Investigation
- Excess of Statutory
- Nationally Accredited Operator Training
- Emergency Response

BHP

Strong Management Commitment

People Involvement

Continual Safety Training

Monitoring

Performance

BHP

MONITORING

- Reporting Systems
- Management Weekly Meeting
- 5 Weekly Management audits
- Workforce Inspections
- Regional Audits/ACIL
- NOSA Grading - NOSA Internal
- Catastrophic Risk
- BHP Minerals Audit

BHP

Strong Management Commitment

People Involvement

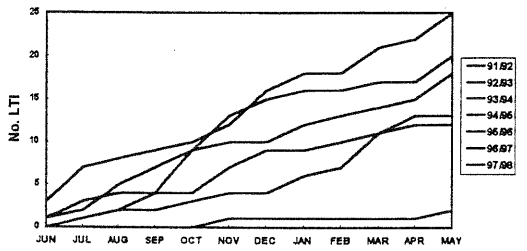
Continual Safety Training

Monitoring

Performance

BHP

LTI ACCUMULATIVE
91/92 - 97/98



BHP

PERFORMANCE

- BHP Coal KPI's
  - Lost Time Injury Frequency Rate
  - Lost Time Injury Severity Rate
  - Medical Treatment Injury Rate
  - Catastrophic Risk Score
  - NOSA Effort Rating

BHP

PERFORMANCE

Rolling 12 Months

	LTIFR	LTISR
Gregory	2.9	11.5
Gregory + Contractors	3.7	18.7

"The Level Of Excellence You Receive Will Be No Higher Than The Level You Demonstrate You Will Accept"